Abstract of the Disclosure

A control system for a low cost, light duty combustion engine, where the control system generally utilizes engine speed or engine speed and temperature input signals and independent operating sequences to determine a desired ignition timing and air-to-fuel ratio for a combustible mixture. There are several independent operating sequences, each one of which is designed to optimally control the engine under certain conditions. These operating sequences include a Cranking sequence that commences after the engine is initially turned on, a Warm Up sequence which follows the Cranking sequence, a Normal Mode sequence which is the operational mode in control under typical operating conditions, an Acceleration sequence which is called upon if the Normal Mode ever detects an increase in engine speed exceeding a predetermined rate, a Come Down sequence which is initiated if the Normal Mode senses a sufficient engine speed followed by a certain decrease in speed, and a Recovery Bump sequence which the Normal Mode calls up if the engine speed dips below a predetermined level. By utilizing these operational sequences and an engine speed input signal, the control system of the present invention improves the engine performance and emissions of a low cost, light duty engine across a wide array of conditions.